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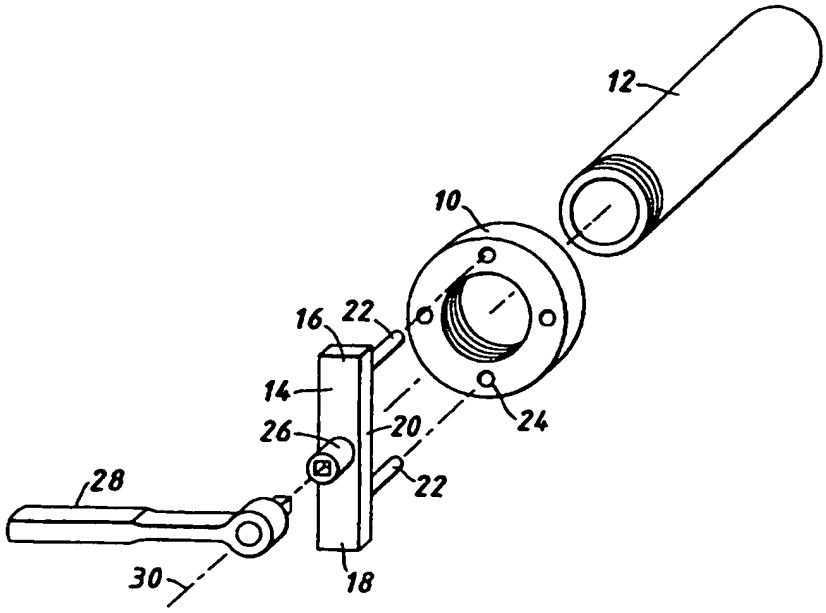
(54) Flange wrench

(57) A device for securing a threaded flange 10 to the threaded end portion of a pipe 12 comprises a plurality of arm portions 16, 18 connected to a central portion 20, flange engaging means 22 located at the remote end of each arm portion and coupling means located on said central portion for engagement with a lever means 28, whereby operation of the lever means causes the device to rotate, thereby rotating the flange 10. The lever means may be a torque wrench.



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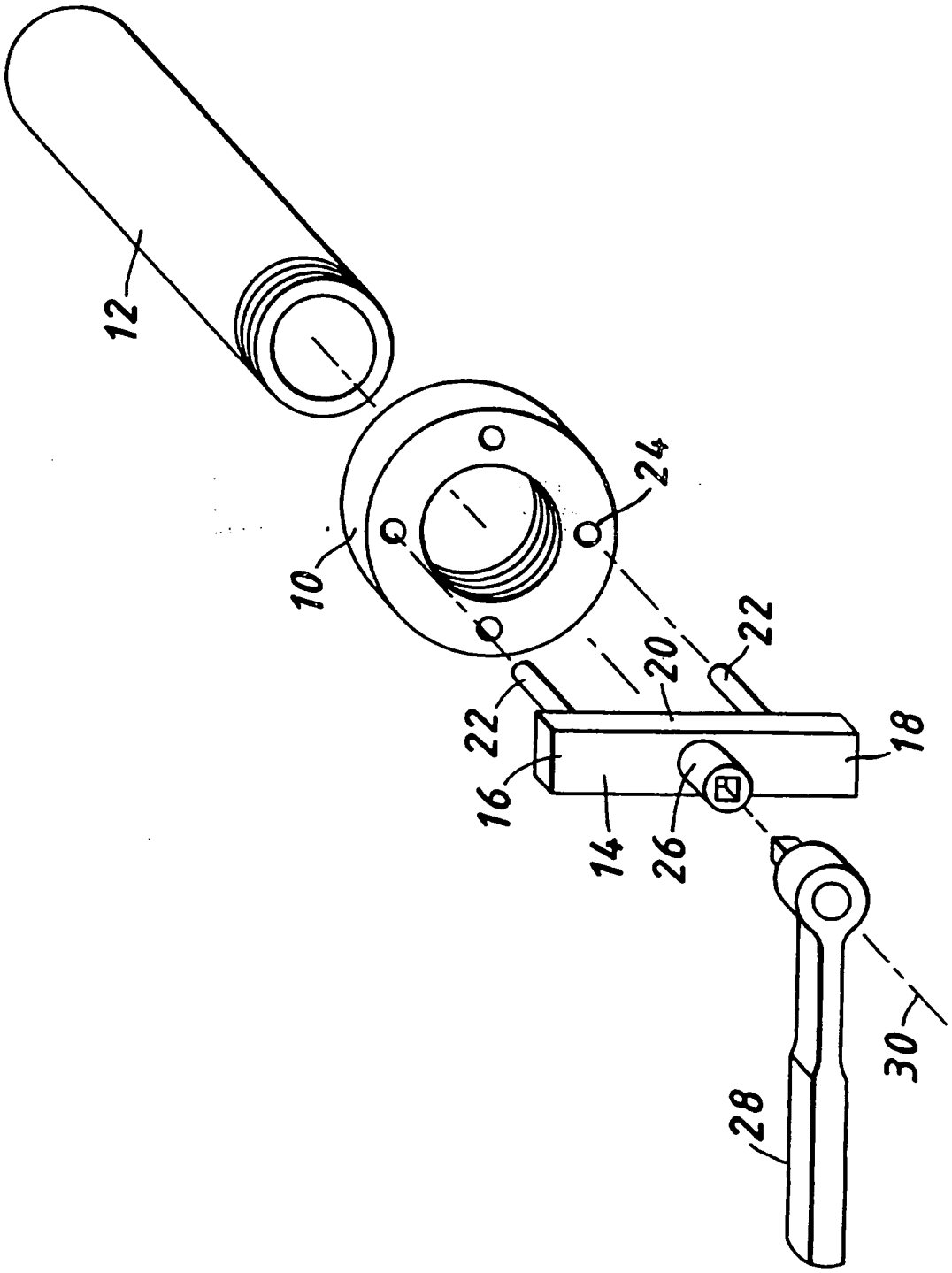
At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.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FLANGE WRENCH

Field of the invention

This invention relates to a device for securing a threaded flange to the threaded end portion of a pipe.

Background to the invention

In the gas distribution industry, as well as in other industries using pipes, it is often required to secure a flange to the end portion of a pipe. Usually the flange has an annular construction and is internally threaded. The exterior of the end portion is corresponding threaded. Once secured to the pipe end, the flange serves to enable the pipe to be connected to other components. To enable this to be achieved, the flange may have a number of holes formed therethrough, close to the periphery thereof. A traditional method for securing the flange to the pipe end is to fix two bolts into two of the holes positioned on the periphery of the flange, such as two diametrically positioned holes, and to use a bar stretched between the bolts to rotate the flange.

A problem with such a method is that the bar may slip and cause injury. Furthermore, the turning force puts a strain on the bolts which may become distorted or damaged as a result. These bolts may then be difficult to remove or be impossible to use for connecting the pipe end to another component.

Summary of the invention

It is an object of the present invention to provide a device for securing a threaded flange to the threaded end portion of a pipe, without the aforesaid disadvantages.

According to the invention, there is provided a device for securing a threaded flange to the threaded end portion of a pipe, the device comprising a plurality of arm portions connected to a central portion, releasable flange engaging means located at the remote end of each arm portion for releasable engagement with the flange and coupling means located on the central portion for releasable engagement with a torque wrench, whereby operation of the torque wrench causes the device to rotate, thereby rotating the flange.

Preferably the flange engaging means (22) is reliable for releasable engagement with said flange. Suitably the coupling means is releasably engagable with said lever means.

Conveniently the lever means is a torque wrench.

In a simple embodiment, the device may comprise two arm positions. For example the two arm portions are integral with the central portion and are constituted by a bar. A device comprising three or more arm portions is also possible. It is preferred that the arm portions are equi-angularly spaced

relative to the central portion. Where only two arm portions are provided, this requirement is most easily met by forming the arm portions and the central portion in the form of a straight bar.

The coupling means is preferably positioned equidistant from the releasable flange engaging means. This provision enables the torque wrench to be coupled to the device at, or close to, the axis of the pipe and flange.

The releasable flange engaging means may usefully be constituted by bolts, insertable in holes formed in the flange. Alternatively, the releasable flange engaging means may be in the form of clamps.

The coupling means for the torque wrench will usually be adapted to the design of the torque wrench itself, for example in the form of a square-shaped, or other non-circular shaped socket.

The invention will now be further described, purely by way of example, with reference to the accompanying drawing which shows a device according to the invention, in exploded view (not to scale).

Referring to the drawings there is shown a device for securing an internally threaded end portion of a pipe 12. Typically, the flange 10 has a diameter of from 2" to 4" (50mm to 100mm).

The device comprises a 1/2" X 1/2" (12.5mm X 12.5mm) straight bar 14 which serves to define two arm portions 16, 18 integrally connected to a central portion 20.

A bolt 22 is welded to each end of the bar 14. These bolts 22 are insertable in holes 24 formed in the flange 10.

A square-shaped socket 26 is located on the bar 14, at a point equidistant from the bolts 22 for releasable engagement with a torque wrench 28. A 1/2" or 3/4" (12.5mm or 18.17.5mm) torque wrench 28 with ratchet is suitable. Thus, the torque wrench 28 can be coupled to the device at the axis 30 of the pipe 12 and flange 10.

When the bolts 22 are engaged in the holes 24 in the flange 10, the flange 10 is offered up to the end of the pipe 12, and the torque wrench 28 is fitted to the socket 26, operation of the torque wrench 28 causes the device to rotate, thereby rotating the flange 10 to secure it to the threaded end of the pipe 12.

CLAIMS

1. A device for securing a threaded flange (10) to the threaded end portion of a pipe (12), the device comprising a plurality of arm portions (16, 18) connected to a central portion (20), flange engaging means (22) located at the remote end of each arm portion and coupling means located on said central portion for engagement with a lever means (28), whereby operation of said lever means causes said device to rotate, thereby rotating said flange (10).

2 A device as claimed in claim 1 in which the flange engaging means (22) is releasable for releasable engagement with said flange.

3. A device as claimed in claim 2 in which the coupling means is releasably engageable with said lever means (28).

4. A device as claimed in any of claims 1 to 3 in which the lever means (28) is a torque wrench.

5. A device according to any of claims 1 to 4, comprising two said arm portions (16, 18).

6. A device according to claim 5, wherein said two arm portions (16, 18) are integral with said central portion (20) and are constituted by a bar (14).

7. A device according to any preceding claim, wherein said coupling means (26) is positioned equidistant from said releasable flange engaging means (22).

8. A device according to any preceding claim, wherein said releasable flange engaging means are constituted by bolts (22), insertable in holes (24) formed in said flange (10).

9. A device according to any preceding claim, wherein said coupling means is in the form of a shaped socket.

The Patent Office

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Claims searched: 1-9 **Date of search:** 16 January 1997

Patents Act 1977
Search Report under Section 17

Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

UK Cl (Ed.O): B3N

Int Cl (Ed.6): B25B

Other: Online: WPI

Documents considered to be relevant:

Category	Identity of document and relevant passage	Relevant to claims
A	GB 0502924 (CAMILLIS) see Fig. 1	-

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.